DMH Series - Digital MEMS Inclinometer

Making Sense out of Motion…

The Jewell Instruments model DMH is a high precision MEMS inclinometer. Units are available with RS232, RS422, RS485 and UART TTL options. All DMH series inclinometers are rated IP67 for waterproofing up to 1m. Custom ranges and output types are also available on request.

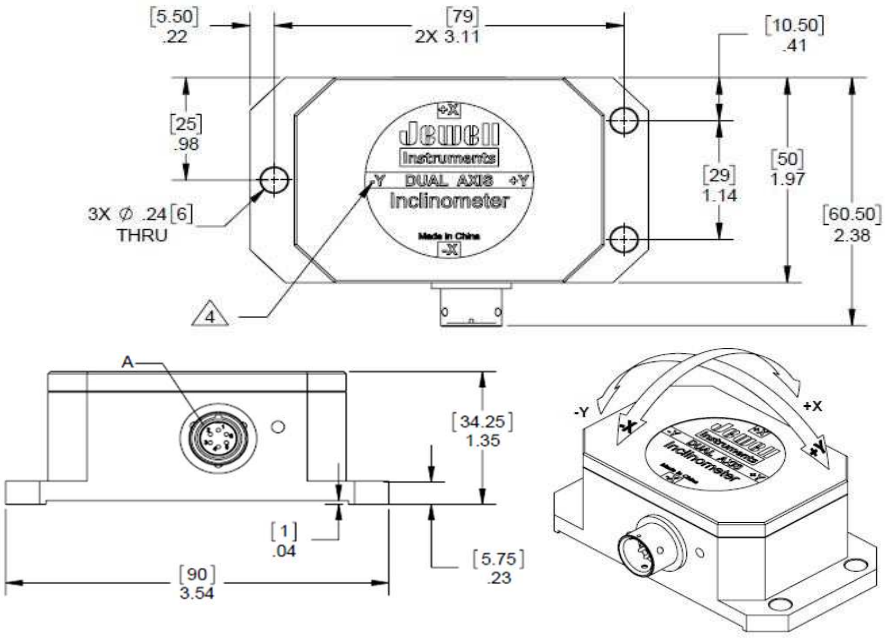
Features & Benefits:

- Single-Axis and Dual-Axis Available
- Resolution <0.001°
- Zero Temperature Coefficient: ±0.006°/°C
- Up to ±90° Angular Range
- -40° to +85°C Temperature Range
- 1m cable whip included

Applications:

- Antenna Deflection Measurement
- Radar & Vehicle Platform Positioning
- Drill Rig Alignment
- Offshore Platform Pitch & Roll
- Industrial Measurement & Control
- Railway Track Alignment & Maintenance

Outline Diagram



**Dimensions in Inches [mm]*

Pin Out

DETAIL A
FACE VIEW
SCALE 1.5 : 1

Pin	Function
1	+VDC 9V~36V
2	RS232 (Rx), RS485 (D+)
3	RS232 (Tx), RS485 (D-)
4	Ground
5	Factory Use Only

Consult Factory for RS422

Performance Specifications

	STATIC/DYNAMIC				
*	Angular Range, °	±10°	±15°	±30°	±60°
	Resolution, °	0.001	0.001	0.001	0.001
	Hysteresis, °	0.005	0.007	0.008	0.01
	Zero Tolerance (°)	0.01	0.01	0.01	0.01
	Zero Temperature Coefficient, (°/°C)	±0.006	±0.006	±0.006	±0.006
	Scale Factor Tolerance (%)	0.7	1.1	1.4	2.8
	Scale Factor Temperature Coefficient, (ppm/°C)	≤200	≤200	≤200	≤200
	Warm up, s	0.5	0.5	0.5	0.5
	Time Constant, s	0.05	0.05	0.05	0.05
	ELECTRICAL AND ENVIRONMENTAL				
	Output Rate	5Hz, 15Hz, 35Hz, 50Hz			
	Output Type	RS232, RS422, RS485, UART TTL			
	Electromagnetic Compatability	EN61000 and GBT17626			
	Impact Resistance	100g@11ms, 3 Times/Axis (1/2 sinusoid)			
	Vibration Resistance	10grms, 10~1000 Hz			
	Temperature Rating , Operation	-40 to +85°C			
	Temperature Rating, Storage	-55 to +100°C			
	Seal	IP67			
	Enclosure	Anodized Aluminum			
	Cables	1m Cable (standard)			
	Weight	150g (without cable)			
	Power Requirements	9-36 VDC @ 60mA			

Notes: * - Custom ranges available, please see model number structure below.

Specifications subject to change without notice on account of continued product development

How To Order:

DMH - X X X - X

Series
- DMH - Digital MEMS Inclinometer

Axis
- 1 - Single Axis (3 Pin Conn.)
- 2 - Dual Axis (5 Pin Conn.)

Range

10	± 10°
15	± 15°
30	± 30°
45	± 45°
60	± 60°

Output Signal
- 232 - RS232 Interface
- 422 - RS422 Interface
- 485 - RS485 Interface
- TTL - UART TTL

Optional ATP Report[1]
- ATP - Full ATP Report (Additional cost applies)

Example:
DMH - 2 - 15 - 232 - ATP
DMH Dual Axis, +/-15 degree, RS232 Interface, Full ATP Report

Note: "ATP" must be added to the end of the part number for a full ATP report. An additional cost will apply.
ATP Report Includes: Scale Factor, Axis Misalignment, Bias, Linearity, Input Current.

Part Numbers

	Single-axis		Dual-axis	
	Model #	Part #	Model #	Part #
RS232 Interface	DMH-1-10-232	02550319-0111	DMH-2-10-232	02550319-0211
	DMH-1-15-232	02550319-0121	DMH-2-15-232	02550319-0221
	DMH-1-30-232	02550319-0131	DMH-2-30-232	02550319-0231
	DMH-1-45-232	02550319-0141	DMH-2-45-232	02550319-0241
	DMH-1-60-232	02550319-0151	DMH-2-60-232	02550319-0251
RS422 Interface	DMH-1-10-422	02550319-0112	DMH-2-10-422	02550319-0212
	DMH-1-15-422	02550319-0122	DMH-2-15-422	02550319-0222
	DMH-1-30-422	02550319-0132	DMH-2-30-422	02550319-0232
	DMH-1-45-422	02550319-0142	DMH-2-45-422	02550319-0242
	DMH-1-60-422	02550319-0152	DMH-2-60-422	02550319-0252
RS485 Interface	DMH-1-10-485	02550319-0113	DMH-2-10-485	02550319-0213
	DMH-1-15-485	02550319-0123	DMH-2-15-485	02550319-0223
	DMH-1-30-485	02550319-0133	DMH-2-30-485	02550319-0233
	DMH-1-45-485	02550319-0143	DMH-2-45-485	02550319-0243
	DMH-1-60-485	02550319-0153	DMH-2-60-485	02550319-0253
UART TTL Interface	DMH-1-10-TTL	02550319-0114	DMH-2-10-TTL	02550319-0214
	DMH-1-15-TTL	02550319-0124	DMH-2-15-TTL	02550319-0224
	DMH-1-30-TTL	02550319-0134	DMH-2-30-TTL	02550319-0234
	DMH-1-45-TTL	02550319-0144	DMH-2-45-TTL	02550319-0244
	DMH-1-60-TTL	02550319-0154	DMH-2-60-TTL	02550319-0254

NOTE: If ATP report is required, please add "-ATP" to model & part numbers. Additional charges will apply